5. Conrad

Program Name: Conrad.java **Input File: conrad.dat**

Conrad is learning about words that have CCPD, a "constant common positive difference."

To have a constant common positive difference, a word must have at least two letters. Then, moving left to right through the word one should consider each pair of consecutive letters. If each pair of letters has the same positive difference (considering the position of the letter in the alphabet), that word has a CCPD.

Example #1 - FHJLJH - the positive differences are: 2 (FH), 2 (HJ), 2 (JL), 2 (LJ), and 2 (JH). Each positive difference is 2. So this string has a CCPD.

Example #2 - ABCDCBBC - the positive differences are: 1 (AB), 1 (BC), 1 (CD), 1 (DC), 1 (CB), 0 (BB) and 1 (BC). The differences are not all the same. So this string does not have a CCPD.

Input: The first line of data will be an integer T in the range [1,20]. T represents the number of data lines to follow. Each line of data will contain one string which has a length in the range [2,26]. The string will consist only of uppercase letters.

Output: Each output will either print the original string if it has a constant common positive difference (CCPD), or the message "BAD!!!" written in all uppercase with three exclamation points if it does not have a CCPD..

Sample input:

```
5
GAGA
GULP
FOX
ABCDEFGHIJLMNOPQRSTU
DINS
```

Sample output:

```
GAGA
BAD!!!
FOX
BAD!!!
DINS
```